THE

BOSTON MEDICAL AND SURGICAL JOURNAL.

VOL. XXVIII. WEDNESDAY, MARCH 29, 1843. No. 8.

AN ATTEMPT TO FORM A PHILOSOPHICAL CLASSIFICATION OF DISEASES, FROM THE ACTION OF THE CONSERVATIVE NERVOUS SYSTEM.

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[Communicated for the Boston Medical and Surgical Journal.]

PHYSIOLOGICAL DATA.

EVERY disease is composed of—1st. A primary impression on the conservative nervous system; 2. The vascular action produced by that impression; and 3d. A conservative action, which is intended to remove local disorder.

The primary impression produces—1st. Contraction of the capillary vessels, and consequent local hyperemia; 2. Excited action; 3. Diminished action, and passive dilatation.

The animal body is an exquisitely constructed machine; and the impulse necessary for its action is received from external impressions, on the conservative nerves. The injury which the internal organs, necessary to life, might receive from powerful external, or immediate impressions, is guarded against by the grand conservative action, which ensures the conservative balance. Yet powerful external impressions may destroy that balance, and produce cachexia, and local disorder.

The human body is divided into a great internal system of organs, which is provided for *making* the materia vitæ; and an external system, which is provided for *keeping* the materia vitæ, in a healthy condition; for circulating the materia vitæ; and for removing all disorder from the internal viscera (e. g., by the muscular actions concerned in respiration—in health; and the muscular actions concerned in respiration—in disease—in hysteria, &c.; and by the excited vascular action, in the external system, removing local hyperemia, as in ague, delirium tremens, consumption, &c.) The brain connects the soul with matter. It presides over the external system *alone*.

CACHEXIA VERA. DISEASE.

Defective organization; and consequent aptitude of the economy to be disordered by slight impressions.

DIVISION I. Asthenic cachexia. Blood defective in quality or in quantity; defective secretion and nutrition.

DIVISION II. Sthenic cachexia. Vascular fulness, and consequent liability of the vascular system to be thrown into intense excitement.

Class I.

Primary impressions, transmitted to the internal viscera by the conservative nerves, causing intense vascular action in those organs: the conservative impressions causing intense excitation of the action of the external system.

Order I. Conservative impressions transmitted to the ganglia and extremities of the nerves of sensation, producing pain.

Genus 1. Without local vascular action. 1. Hysteria. 2. Headache. 3. Angina pectoris.

Genus 2. With local vascular action about the nerves particularly affected. 1. Neuralgia. 2. Rheumatism.

Genus 3. The general excited external vascular action producing disorder of the functions of the brain, forming a paroxysm; the low form of action, which invariably follows excited action, keeping up the cerebral disorder. 1. Hypochondriasis. 2. Mania.

Order II. Conservative impressions causing muscular contractions, and intense external vascular action.

Genus 1. With defective muscular organization. 1. Chorea. 2. Delirium tremens.

Genus. 2. Muscular organization perfect. 1. Hysteria. 2. Epilepsy. 3. Ague.

Genus 3. The internal vascular actions very intense; speedily causing death. 1. Cholera. 2 Convulsions. 3. Hydrophophobia. 4. Cramp of bathers. 5. Tetanus.

Class II.

Primary impressions, producing intense vascular action in the internal viscera; the conservative action removing the immediate condition; but a local vascular action remains, which causes the conservative impressions on the external system to be continuous.

Genus 1. With asthenic cachexia. Typhous fever. Typhoid remittent.

Genus 2. With sthenic cachexia. Synochus. Synochoid remittent.

Genus 3. Conservative impressions on the external system, producing inflammation of the dermoidal system; or abnormal secretion. 1. Typhoid exanthematous fever. 2. Synochoid exanthematous fever. 3. Yellow fever.

Class III.

Excessive evacuation, producing a suppression of the necessary conservative impressions on the heart.

Syncope.

Class IV.

Primary intense impression, producing a sudden excitation of the internal vascular system; the conservative impression on the heart *intense*, so that the auricles and ventricles contract at one time.

Syncope.

CLASS V.

Primary impressions, causing local vascular action; excitation of all the actions, or suppression of the proper functions of the part immediately impressed, to which the impressions are transmitted.

ORDER I. Actions excited, or partially suppressed.

Genus 1. Actions simply excited. Diarrhœa.

Genus 2. Actions partially suppressed. Colic. Dyspepsia. Dysmenorrhœa.

ORDER II. Vascular actions intense. Inflammation. Hemorrhage.

CLASS VI.

Conservative impressions, causing excitation of action in the external system; especially if the conservative action has been modified by an external impression. (For example, in bronchitis, consumption, scarlatina, &c., if the excited conservative action in the external system be modified by the impression of cold on the surface of the body, by which perspiration is checked, severe diarrhœa or dropsy will certainly supervene; unless the conservative impressions from the abdominal viscera excite the functions of the kidneys.)

ORDER I. Conservative impressions from the lungs conveyed to the external system.

Genus 1. Impressions producing muscular action. Asthma. Hooping cough.

Genus 2. Impressions producing vascular action. Profuse perspiration. Dropsy. Some diseases of the skin.

ORDER II. Conservative impressions conveyed to the external system from the abdominal viscera.

Genus 1. To the kidneys. Profuse secretion. Nephritis.

Genus 2. To the skin. Profuse perspiration. Jaundice. Erysipelas; and various other diseases of the skin.

Genus 3. To the skin. Salivation. Mumps.

Genus 4. To the serous membranes. Dropsy. Inflammation.

CLASS VII.

A local impression, producing excitation of the absorbent system of the part impressed.

Ulceration.

CLASS VIII.

Local vascular action, causing abnormal secretion.

ORDER I. Secretion of vitiated mucus.

Genus 1. The catarrhs. Leucorrhœa. Gonorrhœa.

ORDER II. Secretion of serum into the tissues of organs.

ORDER III. Secretion of lymph.

ORDER IV. Secretion of pus.

CLASS IX.

Local vascular action, producing lesions of secretion and nutrition.

ORDER I. Tumors.

Order II. Tubercles.
Order III. Cancer.
Order IV. Cephaloma.
Order V. Melanosis.
Order VI. Gout.

Class X.

Disorganization of the nerves of a part, from defective nutrition; or organic change produced by local vascular action.

Order I. From defective nutrition.
Genus 1. Gangrena senilis.
Order II. From softening, or other organic changes.
Genus 1. Gangrene.

The above classification, which is an extended view of the theories advanced in my "Observations on the Nervous System and the Neuroses," is of importance, not simply from the theoretical explanations, but from the practical deductions which may be drawn from them.

It is for the profession to judge whether or not my practical deductions are fairly drawn from the physiological premises.

MECHANICAL TREATMENT OF CURVATURES OF THE SPINE.

A REVIEW OF DR. J. B. BROWN'S LATE ARTICLE ON RATCHETS AND CORSLETS.

To the Editor of the Boston Medical and Surgical Journal.

Sir,—Having noticed in the Medical and Surgical Journal of this week, a description of the ratchets and brass corslets used in the treatment of curvatures of the spine, with observations and strictures by Dr. J. B. Brown, I am forced to the conclusion that *truth* and *justice*, as well as the interest of the profession, demand of me a critical review and analysis of this communication.

His descriptions of these instruments, described evidently for effect, though calculated to produce, in several respects, erroneous and false impressions, deserve hardly a passing notice. I shall therefore pass on to the assertions he makes, and examine them as I think they deserve.

His first declaration is that he has witnessed the *ill effects* of these instruments; that the effect of the corslets is to compress the chest, the heart and lungs, and all the abdominal viscera, including the uterus, and to produce suppression of the menses; and asserts that this is universally complained of. He further states that it is reasonable to suppose that the effect would be not only to impede the functions of all the thoracic viscera and abdominal organs, but would also prevent all action in the muscles of the back, and very much limit the action of the respiratory muscles. He then asks—if these are facts, how are these instruments ever to effect a cure?

I answer, first, that the facts in the case are widely different from what he asserts. I flatter myself that I shall be able to show conclusively to the profession, that these applications, properly applied and adjusted, are in perfect accordance with the known laws of the animal economy.

What, then, are the effects of lateral curvature of the spine? In this variety of the disease, the first effect is a slight inclination of the spinal column to one side, and, in proportion to the curve, the chest becomes depressed in its anterior and opposite sides, and the opposite front from the curve projects, lengthening the oblique diameter from the curve, and lessening the diameter at a right angle with it. This effect in the progress goes on increasing, until, as in several cases I have witnessed, one lobe of the lungs has ceased its functions, from the fact that no space exists for its expansion. The other lobe also was so much confined that life was hardly sustained, articulation difficult, and respiration a mere panting. One effect of the disease is, then, to distort the chest, and lessen its capacity, which follows from this law, that in proportion as you vary from a circle you lessen the area, or capacity. Another effect of the disease is to shorten the perpendicular diameter of the thorax and abdomen. It also throws the centre of gravity in the outer edge of one foot, and inclines the head to the opposite side from the dorsal curve. A portion of the muscles of each side are shortened, and a remaining portion elongated. It also not unfrequently produces functional derangement of the lungs, chylopoietic viscera, and uterus. All this is the effect of the loss of the balance of muscular power. What, then, are the indications? Evidently to restore the balance of muscular power, and the chest from the elliptical figure produced by the disease, to its naturally circular position. If this is done, all the organs of the body resume their healthy and regular functions, which I have witnessed in many hundred cases.

How are these desirable results to be produced? More than sixteen years since, this with me was a question of great solicitude, deep anxiety, and careful attention. To place patients upon the inclined plane for a given time each day, does not restore the chest to its natural position. And although, for the time being, it renders the spine more straight, yet as soon as removed the parts immediately assume their former position, and little more is accomplished than to increase the extent of motion in the joints of the vertebræ. It does not effect the least approach to a restoration of the balance of muscular power. The effect of this instrument, then, does not and cannot fulfil the indications. Suspension by the spine gig, being analogous in its effects to the inclined plane in all its forms, is productive of no very different results. Will not exercise, then, be the remedy? This is always proper and highly useful, so far as the general health is concerned, but it cannot, nor is it philosophical to suppose that it would, restore the balance of muscular power, or reduce the displaced structures of the body. As soon should we direct a patient with a broken limb to go through with the various exercises of the gymnasium with the expectation of restoring the limb to perfect soundness, and it would be quite as philosophical. Although exercise is highly proper and useful, and is by us always urged, yet it has no effect to restore the chest or spine to its natural positions. If we look for a moment at the philosophy of muscular action, this position must be evident to every intelligent medical man. Every voluntary muscle has its antagonist. Whatever produces motion in a voluntary muscle, necessarily produces motion in its opponent. It is equally true that the power of a muscle does not become predominant over its antagonist by having a greater degree of power exerted in it; for if this were the case, most of the flexor muscles would predominate over the extensors and render the body useless. It is motion, therefore, and not the degree or violence of it, that preserves the proper balance of power. Therefore, all forms of exercise must necessarily do nothing towards restoring the balance of power; and although it invigorates the muscle, it is equally true that the power of its antagonist keeps pace with it. And although its force may be greatly increased, yet the disproportionate force remains the same. It cannot therefore restore the balance of muscular power, nor the displaced portions of the body to their normal condition.

Will not the spine supporter used by Dr. Brown fulfil the indication? This instrument is made so as to rest upon the pelvis, a crutch being placed upon either side extending to the axilla, upon which the arms rest, the effect of which is to raise the shoulders, producing little or no effect upon the spine, and none whatever upon the chest. It is evident, therefore, as the connections of the shoulder are merely muscular, with the exception of the sternal extremity of the clavicle, that the principal, if not the only effect, would be to elongate the muscles attached to the scapula, while the unnatural condition of the chest would not be affected. This must therefore fail, as it always has done, to fulfil the indications.

It would be a useless, and perhaps a profitless, task to go through with all the ingenious contrivances that have been invented to restore the distorted spine and chest, and which have failed to fulfil a single necessary indication.

We will now examine the effect of the ratchets and corslets, and ascertain whether their proper application is philosophical, and whether they fulfil the necessary indications. We have seen that the chest is distorted, its capacity lessened, and its form an ellipsis. To restore it to its natural position, it is absolutely necessary to apply mechanical force. Muscular force with the weight of the body has produced the change, acting mechanically upon the parts. Mechanical force, through other agents than the muscles, is the only remedy that can restore them. This is happily effected by the ratchets, properly made and applied—not the distorted things of Dr. Brown's description; and under their influence alone, health and restoration are very frequently effected. They expand the chest, enlarge its capacity, and render respiration more free and easy. They accomplish this by having their force applied to the prominent points of the chest, while all the depressed portions are left free; the result of which is to elevate the depressed portions, depress the prominent ones, restore the natural figure, and consequently enlarge the capacity of the chest. You depress the prominent portions of an elastic ellipsis, to which the chest may be compared, and the effect is to make it more circular, and thereby enlarge its area. Precisely so is the effect of the ratchets upon the chest, when properly adjusted and wisely applied. They also restore the spine to its proper position, without confining the patient to any fixed position, allowing him free exercise and motion, which is a point of no small consideration. The general health is uniformly improved under their influence, which is an evidence in their favor, of more potency than all the fulminating declarations brought against them. These are facts demonstrated in many hundred cases under my own observation.

We will now examine the philosophy and propriety of the corslets. These are instruments, the ordinary form of which needs no description, and their ill effects are too well understood by the profession to require a word in condemnation of their common use. So is Desault's apparatus for broken thigh. But because a man would be a fool to wear it in health, it does not follow that he would be so when afflicted with a fractured femur. The ordinary corsets, made of cloth and whalebone, press with nearly equal force upon the depressed portions of the chest, and prevent their free expansion. They also press upon portions of the chest and abdomen, where pressure should not be allowed, and frequently produce much disturbance to the healthy functions of the system. It was therefore desirable that an instrument should be made by which all the depressed portions of the chest should be left free to expand by the regular and healthful motions of respiration, and at the same time give proper support to those points which have a tendency to protrude beyond their proper and natural condition, and also to retain the natural and proper position of those muscles whose balance of muscular power was lost, and at the same time allow their healthful and proper action, and produce a free and easy respiration. These indications are fulfilled by the use of several kinds of corslets. That imperfectly described by Dr. Brown is one. Another kind is made without any sort of metallic substance whatever. A third is made with tape, or any other suitable material, having small steel springs so adjusted as to allow of no pressure excepting upon the prominences, or on parts disposed to protrude beyond their natural position. This is equally true of the other kinds. Other kinds are used, adapted to particular cases, but it is unnecessary here to give a description of them. The two last kinds are extremely light, more so than corsets made of cloth and filled with whalebone. It may be asked why it is necessary to give this support after the chest and spine are restored by the use of the ratchets? It is a well-known law of muscular action, that if a muscle or group of muscles are placed in a fixed position, and the sphere of their motions confined within certain limits a given time, they will retain that sphere of action unless altered by force. From this law of muscular action the devotees of India fix their limbs in certain positions, by simply holding them in one position for a length of time. In fractured limbs, several weeks' confinement in one position produces analogous results known to every surgeon. Does not this law equally affect the voluntary muscles of the back and chest? Why, then, should it not be taken advantage of to fix the natural position of the spine and chest when restored, and with as much philosophy and propriety, as to splinter a broken limb when reduced?

We cannot make new physiological laws, nor can we alter what already exists. Our wisdom, then, is to act in accordance with them, and I am happy to announce that the several corsets referred to most happily fulfil these indications, when properly used, without producing any ill results. So far from any consequences following from their use, like those which Dr. Brown imputes to them, the very opposite is the fact. They do not prevent the regular and healthful motions of the muscles of the back, much less do they produce anything like a wasting or paralysis of them or any other muscles. So far from compressing the chest, heart and lungs, just the opposite is the result. They expand the chest, and consequently give more freedom to the lungs and heart. They do not necessarily compress the abdominal viscera, nor interrupt their healthy functions, and may be worn by any person with perfect freedom from any of the effects attributed to them by Dr. Brown. The effect upon the uterus ascribed to them by the doctor is so ridiculous, that it would not have demanded a review had he not connected with it the name of Dr. Green. He asserts that Dr. G. saw four females, in one house, who wore brass corslets, and were suffering under obstructed menstruation. This is very possible. During my residence in Worcester, of about sixteen months, several hundred of my patients boarded at the Worcester House, many of whom, when they came under my care, were troubled with this difficulty. Many of them recovered under the use of the ratchets and corslets, without medicine. Others, knowing the reputation of Dr. Green, may have consulted him. It is true, however, that this difficulty does not exist in so great a proportion among this class of patients, as it does in a majority of other diseases common to females.

How, then, can we account for the fact that Dr. Brown should come out with such a list of distorted charges against a course of treatment, which, we risk nothing in saying, is nearly, if not the only one, that has proved successful in restoring the health and figure to a class of sufferers that deserve all our sympathy and kindness? A. Abbe, M.D.

Boston, March 17, 1843.

EXCISION OF TONSILS—HÆMORRHAGE.

To the Editor of the Boston Medical and Surgical Journal.

Sir,—In your Journal of March 1st, in noticing the treatise of Mr. Yearsley, on "Elongated Uvula, and Enlarged Tonsils," you say he "has *established* that when these parts are in a state of active inflammation, they may be excised with safety and even advantage, as there is scarcely any hæmorrhage,"

On the 18th of January, 1842, I was called in consultation with a very intelligent gentleman in a case of alarming hæmorrhage from tonsils he had removed the day before, when very much enlarged and highly inflamed. At the time of the operation, there was but little hæmorrhage; but in the evening following, it came on so profusely that the physician was called and succeeded in checking it with common astringent gargles. The patient remained quiet until about the same time on the next evening, when the hæmorrhage was more profuse, and more difficult to control, and was not checked until the lunar caustic was applied over the whole cut surface of both tonsils. It was at this time that I was called, but did not arrive until after the bleeding had ceased. The patient had now lost so much blood it was doubtful if he could survive another attack, and it was agreed, if it should return, to apply the actual cautery, and if this were not speedily successful, to tie both carotid arteries.

About the same time in the evening of the next day, the bleeding returned with great violence. The physician, who had been in constant attendance, applied the hot iron to both tonsils, and the bleeding was immediately and permanently checked, and when I arrived the patient was again quiet.

On the accession of the paroxysm the next evening, the hæmorrhagic nisus was so great, and the tonsils so secured by the cautery, that the blood burst from the nose very profusely. This was soon controlled by astringents, and plugging the nostrils, and, the patient recovered.

It may *generally* be safe to remove tonsils in a state of active inflammation, but it is certainly sometimes very dangerous; and although this case may not disprove the general principle *established* by Mr. Yearsley, yet the recital of it may serve as a caution to gentlemen, who are in the habit of performing this operation, and influence them to use the caustic, in preference to the knife, when there is a strong constitutional tendency to hæmorrhage. **Josiah Crosby.**

Meredith Bridge, N. H., March 16, 1843.

MASSACHUSETTS GENERAL HOSPITAL. SURGICAL CASES.

[Communicated for the Boston Medical and Surgical Journal.]

Case I. *Sero-cystic Tumor of the Neck—Adherent to the internal jugular vein—Dissection of the vein—Union by adhesive inflammation—Cure in one week.*—A woman, aged 25, of ordinarily good health, though belonging to a phthisical family, perceived, one year since, a tumor the size of a bean, on left side of the neck, which has gradually increased, but rather more within the six past weeks. There have been occasional sharp, darting pains through it, especially after taking cold, at which times there is increased tumefaction and tenderness. The tumor at present is about the size and shape of a goose-egg, situated about the middle of the left side of the neck, underneath the sterno-mastoid muscle, which crosses it obliquely; it is not attached, moveable, remaining unaltered in position by deglutition or similar motions.

The operation was performed by Dr. Warren, as follows:—The tumor being pushed from behind the sterno-mastoid to its posterior edge, an incision was made through the integuments and edge of sterno-mastoid; the tumor being thus exposed, was separated from its attachments anteriorly, and being drawn out a little, was found to draw out also the internal jugular vein, which closely adhered to its posterior surface. The vein was emptied of its blood by the interruption to its course produced by drawing it out, and dissected from the posterior surface of the tumor, which was then readily removed. The tumor consisted of a collection of cysts in a fibrous envelope, each cyst containing a serous fluid. The wound now, one week from the operation, is entirely healed, and the patient has returned home. There is some contraction of the sterno-mastoid, in consequence of the cicatrization of its fibres, which were necessarily divided, but from this, undoubtedly, she will soon recover.

CASE II. *Tumor situated under the Parotid Gland, pushing forward this body, taking its place, and enveloping the Carotid Artery—Removal.*—A man, aged 34, of good health and habits, first perceived a small tumor under right angle of lower jaw about three years since. This has gradually increased till the present time, though more rapidly within the last year, without pain or tenderness. The tumor, now about the size of a goose-egg, is situated behind right angle of lower jaw, being overlapped and nearly covered by the lower portion of the parotid gland.

The operation for its removal was performed by Dr. Warren, as follows:—An incision being made through the integuments, from the anterior part of the ear to the angle of the jaw, the parotid gland was divided at its posterior third, and the dissection continued to the face of the tumor. At this period of the operation there was copious bleeding, but no artery required to be tied. The surface of the tumor, of course deep, being uncovered, and its fibrous coat distinguished, the dissection was rapidly carried on till the whole anterior face of the tumor was exposed; its inferior portion was then raised and carefully dissected from the carotid artery which ran through it, and the attachment of the upper extremity to the temporal artery dissected off without cutting this vessel. The common carotid was guarded during the operation, and no dangerous hemorrhage occurred. The wound thus made displayed at its bottom the carotid artery, to which the tumor was attached, at its upper border the angle of the jaw, below the digastric, and to the outside the sterno-mastoid muscles. The wound was brought together by three fine sutures, and dressed with cold-water compresses, and adhered by the first intention, except at its inferior angle, which gave vent for a few days to a copious discharge of salivary fluid. The tumefaction of the parotid gland and consequent pain were severe, but terminated without suppuration.

Remark.—This tumor had somewhat the appearance of fungoid or cephalomatous substance; but being circumscribed by a regular fibrous sac, there is little danger of any return of the disease.

CASE III. *Fracture of the Cartilage of the third and fourth Ribs of the right Side—Rupture of the Intercostal Muscles—Protrusion of the Lung beneath the Skin and rupture of its Substance—Partial Pneumonia of the Left Side—Death—Autopsy.*—A stout, healthy man, aged 30, in the use of spirits, though not considered intemperate, while at work in an organ loft, was prostrated by the fall of a heavy drum used for the passage of the driving band of the machinery. The blow was received upon the right side of the sternum. When examined, the system was in a state of collapse. At the seat of the injury it was easy to detect a complete fracture of the cartilages of the third and fourth ribs, the ribs themselves being much separated. Between these there appeared a tumor the size of the clenched fist, which retreating and protruding with the movements of respiration, left no doubt of its being the lung; this viscus, in fact, was directly under the skin, the parietes and muscular integuments of the chest being broken and torn through by the injury. An emphysema soon appeared over the chest and neck, and extended to the arms. The distress and dyspnœa were extreme; this was greatly relieved by a full dose of opium, ordered by Dr. Warren, and the next day he was comparatively comfortable; but he gradually sunk, and died sixty hours after the operation.

The autopsy was made eleven hours after death, by Dr. S. Parkman, in presence of Drs. Warren, Townsend, and other medical gentlemen. The emphysema still persisted as before death. The integuments being dissected from the sternum and ribs, there was observed a fracture of the third and fourth costal cartilages of the right side, the former rather the nearer the sternum; the intercostal muscles between these two ribs were torn away for about four inches, this rupture of the muscles and fracture of the cartilages leaving an opening through the parietes of the chest about four inches in the horizontal and three in the vertical direction. The right pleura contained about three half pints of coagulated blood. The upper lobe of the right lung presented a rent in its anterior surface about six inches long and three deep; the torn surfaces were covered by a thin pellicle of coagulable lymph, and the neighboring pulmonary tissue was solidified by the adhesive inflammation. On the posterior surface of the upper lobe of left lung, there existed a superficial pneumonia, extending about half an inch into the pulmonary tissue, and covering about six square inches. This pneumonia was as yet in the second stage, the tissue being granular, easily breaking down under the fingers; but a degree of greyness upon the cut surface, with a slight greyish exudation upon pressure, gave evidence that it approximated the third or purulent stage. These changes, it will be remembered, must have taken place within sixty hours. There existed, likewise, a serous œdema throughout the bronchial ramifications of both lungs.

THE ARTERIAL SYSTEM.

[Communicated for the Boston Medical and Surgical Journal.]

The knowledge of anatomy is very important even in understanding the true structure of an ARTERY with its liability to disease. Artery is from the Greek *arteria*, signifying an air vessel; because the ancients, ignorant of the circulation, and finding the arteries always empty after death, supposed they were tubes containing air. Why, after death, the arteries are empty and the blood accumulated in the veins, will be explained hereafter. By the term *artery* is meant a vessel which conveys blood from the heart to the different parts of the body; a *vein*, on the contrary, is a vessel which conveys blood from the different parts of the body to the heart. All the arteries of the system proceed from two great trunks immediately connected with the cavities of the heart; namely, the *pulmonary* artery, which arises from the right, and the *aorta*, which springs from the left ventricle. The pulmonary artery conveys blood from the right ventricle of the heart to the lungs; the aorta carries blood from the left ventricle of the heart to all the parts of the system, and consequently is the common source of all the arteries of the body, with the exception of those which circulate through the lungs. The arteries derived from the aorta contain *arterial*, those derived from the pulmonary artery contain *venous* blood, and this latter vessel is the only artery in the system which does not contain *arterial*, that is, *decarbonized*, or proper nutrient blood.

The arterial system is arborescent; that is, the branches which spring from the aorta successively increase in number and diminish in size as they proceed from the heart towards their ultimate terminations in the system. Each trunk commonly ends by dividing into two or more branches, the combined area of which is always greater than that of the trunk from which they spring. The capacity of the branches is estimated to exceed that of the trunks in the proportion of one and a half to one. The arterial trunk always dividing into branches, and the larger branches into branches more and more minute, it is obvious that the blood in the arterial system is always flowing from larger into smaller tubes.

The organization of the arteries is peculiar, and differs considerably from that of the veins. They are of a yellowish-white color, loose and flocculent on their external surface, but their internal surface is smooth and polished. They are composed of three distinct membranes, which are superimposed one upon the other, and which are intimately united by delicate cellular tissue. Each of these membranes is called a *tunic*, or coat, and each possesses a peculiar structure, and performs a separate function in the circulation of the blood.

1. The internal tunic consists of a membrane, colorless, transparent and thin, yet so firm and strong that it is supposed to resist more than any of the others the bursting of the artery by the current of the blood; for if, in a living animal, the other coats be entirely removed, this alone is found capable of sustaining the impetus of the circulation, and of preventing rupture from the dilatation of the artery.

2. The middle tunic, called also the fibrous and the muscular, is composed of yellowish fibres, which pass in an oblique direction around the calibre of the vessel, forming segments of circles which are so joined as to produce complete rings. In the larger trunks, several layers of these fibres can be raised in succession by the forceps, so that this coat is of considerable thickness, and it is proportionally thicker in the small branches than in the large trunks. This coat is firm, solid and highly elastic. It is the main tunic by which the artery resists dilatation in the transverse direction, which it does so effectually, that when the left ventricle of the heart propels a fresh current of blood into the aorta, little or no dilatation of the vessel is perceptible. The characteristic property of the fibrous coat is contractility. If it be mechanically irritated, or if a chemical stimulant, such as ardent spirit or ammonia, be applied to it, the vessel contracts forcibly upon its contents. This contractile power, which properly belongs to the muscular fibre, induced anatomists to believe that the

fibrous tunic consists of muscular fibres; but careful examination has shown that its organization possesses nothing in common with that of the muscular tissue, while chemical analysis has demonstrated that it contains no *fibrin*, which is the basis of muscle.

3. The external tunic, called also the cellular, consists of small whitish fibres, very dense and tough, interlaced together in every direction. It is much thicker in the large trunks than in the small branches, the reverse of the fibrous coat. Its outer surface is covered by a loose and flocculent cellular substance, which connects the artery with the surrounding parts, and particularly with the sheath of the vessel. Its firmness and resistance are so great, that it is not divided, however firmly a ligature may be placed around the artery; and its elasticity, especially in the longitudinal direction, is so remarkable that it has been called, by way of eminence, the elastic coat.

Arteries are themselves abundantly supplied with arteries, constituting their nutrient vessels, and called *vasa vasorum*; but these nutrient vessels of the artery, form but few *anastomoses*, that is, but few communications with any other arteries. It is essential, in tying an arterial trunk, to disturb it as little as possible, and only to expose just so much of it as is indispensable for the proper application of the ligature. In the first cases treated by Mr. Hunter for aneurism, four ligatures were placed around the diseased artery, which was divided in the intervening space. Two of these were called safety-ligatures, being intended to be drawn tight if the others gave way; but the application of these ligatures disturbed the nutrient arteries of the vessel to such a degree, that inflammation, ulceration, mortification and hæmorrhage ensued, so that those so called *safety*, were really *danger*, ligatures, producing the very evils which they were intended to avert. The careful observation of the functions of these vessels has corrected this and several other errors, and led to most important improvements in surgical practice.

The principal nerves of arteries are derived from the ganglionic, or the organic system, but with these are mingled branches derived from the sentient, or the animal system. Accordingly, under ordinary circumstances, arteries carry on their functions independently of any influence derived from the brain and spinal cord, but they are capable of being affected by agents applied to those organs. Under ordinary circumstances, and in a state of health, arteries are but little sensible; they may be irritated in living animals by the scalpel, or by the application of chemical stimulants, without affording any indication of pain. Nevertheless, in certain states of disease, there cannot be a question that they become exquisitely sensible.

Among the physical properties of arteries, the most important are their *extensibility*, and their *elasticity*. Their extensibility is in the direction of their length. If an artery be tied in two places, and divided between the ligatures, the portion which is next the heart is sensibly elongated at each contraction of the ventricle; but their extensibility in the circular, or transverse direction, is not great.

After an artery has been extended, either lengthwise, or transversely, it suddenly retracts on itself when the extending force is removed. If the finger be forcibly introduced into the section of a large artery, the sides of the vessel re-act on the finger, and proportionally compress it. If an artery be divided in the dead body, though emptied of its contents, it maintains its cylindrical form, and preserves its capacity unimpaired. The elastic property on which these phenomena depend is common to all the coats, but it is greatest in the external, and least in the internal tunic; and it is also much greater in the large trunks than in the small branches. Elasticity, in the longitudinal direction, restores the artery to *ts* original state after it has been elongated in the various motions of the body; in the transverse direction, it keeps the artery open, and thus maintains a free channel for the passage of the blood through the vessel, while it also assists the fibrous tunic in resisting the over-distension of the artery by the impulse of the circulating current.

The most important vital property of the artery is its contractility; that is, its power of diminishing its capacity, or approximating its *parietes*, and thus proportionally acting upon its contents. Even the large trunks possess this property in some degree; but it resides chiefly in the ultimate divisions of the arterial branches, that is, the *capillary vessels.* The main purpose of the trunks and large branches of the arteries is to receive the blood from the heart, and to transmit it to the capillary in the organs. The purpose of the capillary vessels is as various as the actions of the organs in which they terminate, and of which actions, indeed, they are the great instruments. Between the trunks and large branches of the arteries and their ultimate divisions, there is such a total difference in structure and function, that they must be regarded as two distinct sets of vessels, and the latter require a separate consideration.

Arteries, besides capillary vessels, terminate also in veins, in exhalant vessels, that is, colorless vessels, which are supposed to open by minute orifices on various membranous surfaces, perhaps in lymphatic vessels, and in excretory ducts.

The principal diseases to which arteries are liable, are inflammation, ossification (deposition of bony matter), calcareous deposition (deposition of chalky matter), and aneurism. R. C****.

Boston, March 16, 1843.

CHOREA.

[Communicated for the Boston Medical and Surgical Journal.]

Mrs. R., æt. 45, of strongly-marked nervous temperament, has been afflicted with St. Vitus's dance since the age of puberty. By strict attention to diet, and avoiding causes of excitement, years have intervened between the occurrence of the paroxysms. Latterly, however, spasmodic contraction of the muscles to some extent may be observed after the patient has experienced either pleasant or painful emotions.

One of the most interesting of the exciting causes in this case is music, which operates on the principle of "*similia similibus medentur;*" but which often requires a larger quantity to cure than produce. Any rapid tune—a "dancing tune," for instance—will throw the voluntary muscles into the most uncontrollable and dissociated action imaginable. By changing the tune to "Home, sweet home," the spasmodic twitching of the muscles gradually subsides until she becomes calm again.

Richter asserts that music has sometimes produced astonishingly tranquillizing effects in this disease. This case proves the correctness of the assertion, and likewise in part what I believe to be true, that all the sciences contribute more or less to medicine—and if it were possible that physicians could become acquainted with all science, medicine would be certain in its operation. But this can only be attained by infinite minds. And yet the idea that medicine should act with mathematical certainty upon every organ to which it is directed—that every lesion in an organ should be cured—has given countenance and support to innovations in medicine diametrically opposed to reason, judgment and common sense. It is this idea which has led men of sane minds to consult oracles, wear amulets, be stroked by the hand of the seventh son, touched by the fingers of the magnetizer and the points of the tractors—and, lastly, as if it capped the climax upon human credulity and weakness, swallow the infinitesimal doses of the homœopath. Yet all these have contributed in some way to the science of medicine—if in nothing more, they have directed the attention of the physician to the influence of the mind upon disease, and also shown him how far the *vis medicatrix naturæ* may be relied upon in its management. A. F. C.

Goffstown, N. H., March 15, 1843.

THE BOSTON MEDICAL AND SURGICAL JOURNAL.

MARCH 29, 1843.

*Fergusson's Practical Surgery.**—There will not be the shadow of an excuse, in these United States, for any one belonging to the medical profession not being conversant with the medical literature of the whole world. Books are multiplied almost beyond reckoning, and are still multiplying with rapidity. An author of respectability no sooner appears in any part of Europe, than he becomes as well known here, through the energy of the press, as in the immediate neighborhood of his residence.

There is another fact, that is really one of importance, in regard to the republication of foreign books, especially those which are strictly on medicine and surgery and their collateral branches, which is, they undergo a kind of remodelling here, under the supervision of some one who is abundantly competent to adapt them to the condition of things in America, who makes such additions and improvements as his own genius may suggest, or which time may have developed since the first publication of the book. Hence an American edition of any scientific production, which has passed through a judicious revision here, under the careful inspection of a person of acknowledged qualifications, is superior to the original.

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* A System of Practical Surgery. By William Fergusson, F.R.S.E., Prof. of Surgery in King's College, London, Surgeon to the King's College Hospital, &c. With two hundred and forty-six illustrations, from drawings by Bagg, engraved by Gilbert. With Notes and additional Illustrations, by George W. Norris, M.D., Surgeon to the Pennsylvania Hospital. Philadelphia. Lea & Blanchard. 1843. 8vo. Pp. 629.

We know not how generally Mr. Fergusson's System of Practical Surgery may be known to practitioners; but those who are strangers to it ought not to be so any longer, since it is obvious that it is destined to work its way into public favor. George W. Norris, M.D., one of the Surgeons of the Pennsylvania Hospital, who has added notes and additional illustrations, says, in a short preface, that it "is so well adapted to the present wants of the American student and practitioner, that no apology is necessary for introducing it to their notice. The work is at once clear and concise in style, strictly practical in its contents, and the wood cuts, admirably executed by Mr. Gilbert, are remarkable for their spirit and accuracy." Dr. Norris is good authority: he is not a man to bestow commendation where it is not deserved, nor would he hazard a growing reputation by recommending to the notice of surgeons anything that would not bear the most critical examination.

In external appearance, Fergusson's Practical Surgery corresponds with that elevated class of volumes for which the house of Lea & Blanchard, of Philadelphia, have long been distinguished. The two hundred and forty-six engravings are as correct and beautiful as can be found any where. We bespeak for such a book the countenance and patronage of a liberal-minded faculty.

*A Conspectus of the Pharmacopœias.**—Anthony Todd Thomson, M.D., Professor of Materia Medica in the London University, is the author of a pocket volume, bearing this name, which has been so much prized that it has already passed through thirteen editions in England, and two in the United States. Its use consists in furnishing a practitioner with an alphabetical catalogue of every article used in the practice of medicine, the kingdom to which it belongs, and the various preparations made of it, its effects on the system, the dose, &c., minutely expressed in the fewest words, yet without a poverty of description. An example of the whole is presented under the article *Vinum.* "Vinum Colchici. U. S. L. E. Wine of Colchicum. R. Colchici cormi ℥ viij., Vini. Xerici Oij. Macerate fourteen days and strain. *Comp.* Gallate of Colchicia and Wine. Oper. Diuretic; Sedative; Purgative. *Use.* In gout, rheumatism, and all inflammatory affections. *Dose.* From M. xxx. to fʒj. in any mild fluid." It is to all intents and purposes a comprehensive epitome, as the American editor judiciously remarks, of the science of pharmacy and materia medica, comprising an amount of information unparalleled in so small a space. Charles A. Lee, M.D., of New York, is the gentleman to whom we are indebted for this admirable edition, being the second published in this country, and therefore essentially improved. Care was taken to supply any deficiency, and to adapt it to the present state of pharmaceutical science.

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* A Conspectus of the Pharmacopœias of the London, Edinburgh, and Dublin Colleges of Physicians, and the United States Pharmacopœia—being a Practical Compendium of Materia Medica and Pharmacy. By Anthony Todd Thomson, M.D., &c. &c. Second American Edition, much enlarged and improved. Edited by Charles A. Lee, M.D. From the thirteenth English edition. New York. J. & H. G. Langley. 1843. 12mo. p. 288.

More than one hundred pages have been actually added by Dr. Lee, and all the new remedies, by Dunglison, Wood, Bache, &c., introduced. Upon the authority of Drs. Liebig, Kane, and Thomson, a vast number of chemical compositions are also introduced. It is exceedingly difficult to point out the many advantages of this compact conspectus, so replete with useful, necessary and indispensable information. The form of the copy before us is that of a pocket-book, with an apartment, of course, for bank bills—which, if well filled, and in company with the book, would comprise no small share of what a young physician needs in order to rise to distinction—viz., available instruction, and something wherewith for procuring the necessaries of life.

Encouragement of Meteorological Science.—Senator Evans intimated, at the late session of Congress, in the course of his remarks upon the subject of appropriating $2000 per annum for improving and extending meteorological observations, that Dr. Lawson, the Surgeon-general of the Army, had expressed some hostility to the design. Through the National Intelligencer, Dr. Lawson shows, most satisfactorily, that he never objected in any way, directly or indirectly, in the matter, nor would it be of the least consequence to him one way or the other, whether Congress pays Mr. Espy two, three or ten thousand dollars a year to ascertain which way the wind will blow, scientifically, a hundred years hence. Dr. Lawson says in the communication referred to:—"Whenever I am officially called upon to report whether Mr. Espy has already given me assistance, or can render any service to the Medical Bureau, or to the Medical Staff of the Army, in prosecuting meteorological observations, as contemplated by the letter of the law, I shall be found ready to state things as they are, without partiality, favor, or affection.

"I owe it to the medical officers of the army, however, to state here, that, so far as the meteorological observations have been conducted the past year, the Department is indebted to them *alone* for all the information obtained, and for all the arrangements, including the necessary directions and forms for prosecuting the observations on a more extended scale hereafter.

"In relation to the fact that I did not in my "estimates" include the salary of Mr. Espy, I have to say that it was no fault of mine.

"When the annual estimate for the salaries of the clerks in the Surgeon-General's office was about to be prepared, the first clerk of the office was sent over to the War Department to ascertain whether or not Mr. Espy's salary was to be included in said estimate. The clerk returned with an answer from the chief clerk of the War Department, "*No; Mr. Espy would be provided for in some other way.*"

Dr. Linn, the senator of Missouri, in the same debate, made remarks implying dereliction of official duty, or ignorance, of the late Surgeon-General, Dr. Joseph Lovell, which was resented by the present incumbent in a spirited manner, showing that he cannot quietly hear the name of a worthy man, now in the grave, defamed. He says that the system of requiring meteorological observations to be taken at the different military posts, was instituted by his honored predecessor, Dr. Lovell, a gentleman well known to the profession in New England, and especially in Boston.

"With the limited means at his command, however," says Dr. Lawson, "he had the *materiel* so arranged as to be available to those who came after him; and, besides, he had abstracts made from the meteorological diaries kept at the different military posts, embracing a period of five years, and the facts, with the material deductions therefrom, were given by him to the public in 1826. These abstracts were afterwards extended under my administration of the medical department to the period of ten years, and the results, with suitable remarks on the science of meteorology generally, were published in 1840.

"In addition to the facts and observations put forth on the science of meteorology, a statistical report on the sickness and mortality in the army of the United States, embracing a period of twenty years, was also given to the public in 1840. From this statement it will be seen that, so far from the materials which were collected in the Department being permitted to 'lay waste and useless,' they have all been pretty much worked up, fashioned and given to the public, and to what extent of usefulness I leave to others to determine.

"To the assertion that a gentleman of the army (medical officer) undertook the arrangement of the matter on the files of the Department on his own responsibility, my letter to Mr. Linn and the two works issued from this office in 1840, furnish a satisfactory answer."

We are extremely gratified that Dr. Lawson has taken a bold stand in this mean business on the part of two Senators, first to accuse him of standing in the way of Mr. Espy's advancement; and second, in underrating the services and attainments of the late Surgeon-general Lovell, who lived respected and died lamented.

The New York Lancet.—Inquiry is frequently made why this popular work is not now delivered in this region, as formerly. Surely, with the rapid and uninterrupted daily intercourse that is maintained between Boston and New York, there ought not to be any delays whatever in furnishing the subscribers promptly. For six weeks or more, the exchange copy has failed to come to this office; and Mr. Redding, the agent, in State street, says that no packages have been received by him for a long time, and he suggests that the Lancet has been stopped. If it had the great circulation that was claimed for it by its immediate friends, the idea of the earth's standing still in her orbit would not be more surprising than to suppose that it had died a natural death. If some one will explain this mystery he will relieve the present uncomfortable feeling of suspense.

The Magnet.—A monthly periodical, with this name, of the large octavo form, in double columns, is published at New York, conducted by the Rev. La Roy Sunderland, which has reached its tenth No. The prospectus of a second volume accompanies this No., which begs hard for support. It is to be devoted to all the extraordinary things imaginable—a part of them, at least, being known to have sound without substance, viz., *cephology*, phrenology, *pathelology*, psychology, *neurology*, physiognomy, electricity, galvanism, magnetism, light, caloric and life. The design is, says the reverend editor, the investigation of all the laws which appertain to human life, "and which are concerned in the production of those states of the mind called *somnambulism*, *insanity*, *dreaming*, *second sight*, *somnipathy*, *clairvoyance*, and various other mental phenomena which have hitherto remained shrouded in mystery"—and which will so remain, we fear, in spite of any really scientific efforts by those who examine them in the dim light of Mesmerism. Very many curious facts are congregated in this publication, which are worth knowing, but which are as foreign from the domain of animal magnetism, as Georgium Sidus is from the Dog star. Every occurrence in the moral or physical world, however trifling or unimportant, is looked upon by the disciples of this raging epidemic as a convincing evidence of the splendid achievements of magnetism! While the fever lasts, it is utterly useless to reason with those who delight in dragging this great Juggernaut car, freighted with a declared remedy for human woes and human imperfections. They seek controversy as the only hope of lasting distinction; and, like Mawworm in the play, they can say with truth, "*I courts persecution.*"

Application of Alcohol in Erysipelas.—Drs. Hatch, of Burlington, Vt., and Spaulding and Adams, of Montpelier, concur in representing that alcohol is calculated to produce harm instead of benefit, in erysipelas, as it increases the intensity of inflammation. With regard to its preventive powers, which is a vulgar opinion extensively circulated, experience has shown that no reliance whatever can be placed upon it. Nothing is more intolerably offensive to an erysipelatous patient, than the odor of alcohol, when evaporating from the face, for example. Some of the best practitioners, in other respects, still persist in the topical application of this poisonous article, notwithstanding the warning voice of nature. The hydropathists are reaping laurels daily by the simple application of cold water, in all forms of erysipelas, in the treatment of which they should be, if not already, acknowledged eminently successful.

American Professional Representatives in Europe.—Dr. Thos. Sewall, of the city of Washington, one of the Faculty of Columbian College, whose writings are extensively circulated, and whose reputation as a philanthropist is intimately connected with the great temperance reformation, will sail for Europe in the course of a few weeks. He will go in company with Judge Story, of the Supreme Court of the United States, the most celebrated author on jurisprudence America has yet produced. Two such representatives of the two professions of law and medicine, will be honorable to our country.

Brass Ratchets and Corslets.—Note from the Hon. James L. Hodges, of Taunton.—To THE EDITOR—Sir,—Perusing your valuable Journal of the 15th inst., I was particularly drawn to an interesting article by Dr. J. B. Brown, on the effects of wearing brass ratchets and corslets. From the experience I have had of them in my own family, while my son was partially under the care of Dr. Abbe, at Worcester, and was subject to the misery of them, at his instance, and from observations I have made respecting other subjects of his professional care, I have no doubt of the entire truthfulness of Dr. Brown's statements and inferences in the article to which I refer.

Taunton, March 24, 1843.

Number of deaths in Boston, for the week ending March 25, 35.—Males, 10; Females, 25. Stillborn, 2.

Of consumption, 5—inflammation of the bowels, 1—congestion of the brain, 1—child-bed, 2—smallpox, 2—lung fever, 4—burn, 1—erysipelas, 1—croup, 2—infantile, 2—scarlet fever, 2—old age, 2—bilious fever, 1—cancer, 2—inflammation of the lungs, 1—marasmus, 1—pleurisy fever, 1—canker in the bowels, 1—hooping cough, 1—intemperance, 1—apoplexy, 1.

Under 5 years, 15—between 5 and 20 years, 1—between 20 and 60 years, 13—over 60 years, 1.

Mesmerism.—The following *jeu d'esprit*, purporting to be a note from Timothy Goslin to the Editor of the London Medical Gazette, is copied from a late number of that periodical.

Sir,—I feel assured that you and every friend of humanity will most heartily rejoice in the most valuable discovery which has lately been made in Germany, by which such great relief will be afforded to the numbers of our fellow creatures who are now suffering so severely in these hard times. The discovery was made by the learned Professor Phillpokkett, of the celebrated University of Puffinburg. It is well known that the Professor has been long engaged in the practice of mesmerism on a very extensive scale, while he has also been one of the great patrons of homœopathy. Now the discovery in question unites the merit of both these operations. He has found out a method of mesmerizing the digestive organs, so as to render them quiescent for as long a period as may be necessary or desirable, during which period food of any kind is rendered quite unnecessary; and when food is required, he has discovered a mode of giving it in very minute quantities, when he employs a certain process by means of which a single grain of aliment will produce as great an effect as a pound in the way in which it was formerly used. I need not enlarge upon the marvellous benefit which must be derived from these discoveries; food will now be almost superseded; it is estimated that one per cent. of the quantity hitherto used will suffice for all the real wants of the system. A laborer, who formerly required his pound of bread, or cheese, or bacon, will now be kept in perfect health and vigor by a few grains; an infinitesimal part of a beef-steak, or a mutton chop, will afford a plentiful meal, while bread will scarcely be required. The only objection that can possibly be urged against this discovery is the outcry that we must expect will be raised by the landed gentry. It will, no doubt, nearly supersede the use of corn, and amazingly diminish the quantity of oxen and sheep that will be sent to the market. But we know that they are a most selfish set, always bent upon their own interest, and quite disregarding the people at large: and, I think, they richly deserve to suffer for their unfeeling conduct. Your readers will be very happy to be informed that the Professor has made the necessary preparations for sending into this country a very intelligent pupil of his, M. Rennard, who is to act as his agent, and will give instructions in the method of putting the invention in practice. Professor Phillpokkett himself, as is well known, is a gentleman of unbounded benevolence and philanthropy, and it was his intention and earnest desire to have communicated his discovery to the world without any profit or compensation; but, at the earnest desire of his friends, he has been prevailed to accept a small remuneration for his services; and this he proposes to do by a charge of 90 per cent. upon the sum which will be saved to his patients, which will be only a fair recompense to him for the time and labor which he has bestowed upon his discovery, while he will still bestow an immense benefit upon the public. When M. Rennard arrives in England, you shall hear from me without delay.—I am, sir, your most obedient servant,

Timothy Goslin.

Just published in London, Second Edition, revised, Practical Observations in Midwifery, with Cases in Illustration. By John Ramsbotham, M.D, Consulting Physician-Accoucheur to the Royal Maternity Charity, &c. &c.